

## WHAT IS CLAIMED IS:

- 1 1. A method for delivering a compound 8 to 80 nucleobases in length into bone  
2 marrow derived osteoclast precursor cells, comprising transfecting said cells with said  
3 compound in the presence of a non-liposomal transfection agent.
- 1 2. The method of claim 1, wherein said transfecting occurs during early  
2 differentiation of said bone marrow derived osteoclast precursor cells.
- 1 3. The method of claim 2, wherein said bone marrow derived osteoclast precursor  
2 cells are cultured in the presence of RANK-ligand (RANKL) and macrophage colony  
3 stimulating factor (MCSF), wherein said early differentiation is after day two of said  
4 culturing.
- 1 4. The method of claim 3, wherein said early differentiation is before day four of  
2 said culturing.
- 1 5. A method for delivering a compound 8 to 80 nucleobases in length into a cell  
2 line whose cells are capable of differentiating into osteoclasts, comprising transfecting  
3 said cells with said compound in the presence of a non-liposomal transfection agent.
- 1 6. The method of claim 5, wherein said cell line is RAW264.7.
- 1 7. A method for delivering a compound 8 to 80 nucleobases in length into primary  
2 osteoclast cells, comprising transfecting said cells with said compound in the presence of  
3 a non-liposomal transfection agent.
- 1 8. A method for modulating osteoclast differentiation, comprising delivering a  
2 compound 8 to 80 nucleobases in length into bone marrow derived osteoclast precursor  
3 cells, said compound targeted to a nucleic acid molecule encoding RANK and capable of  
4 binding a region of said nucleic acid molecule encoding RANK, wherein the osteoclast

5 differentiation of said bone marrow derived osteoclast precursor cells is modulated by  
6 said compound.

1 9. The method of claim 8, wherein said delivering comprises transfecting said  
2 compound into said bone marrow derived osteoclast precursor cells.

1 10. The method of claim 9, wherein said compound inhibits the expression of RANK  
2 mRNA by at least 10% upon transfection.

1 11. The method of claim 9, wherein said transfecting is performed in the presence of  
2 a non-liposomal transfection agent.

1 12. The method of claim 1, 5, 7, or 11, wherein said non-liposomal transfection agent  
2 is one of Effectene<sup>®</sup> and FuGENE 6.

1 13. The method of claim 1, 5, 7, or 9, wherein said compound comprises 12 to 50  
2 nucleobases in length.

1 14. The method of claim 1, 5, 7, or 9, wherein said compound comprises 15 to 30  
2 nucleobases in length.

1 15. The method of claim 1, 5, 7, or 9, wherein said compound comprises an  
2 oligonucleotide.

1 16. The method of claim 1, 5, 7, or 9, wherein said compound comprises an antisense  
2 oligonucleotide.

1 17. The method of claim 1, 5, 7, or 9, wherein said compound comprises a DNA  
2 oligonucleotide.

1 18. The method of claim 1, 5, 7, or 9, wherein said compound comprises RNA  
2 oligonucleotide.

1 19. The method of claim 1, 5, 7, or 9, wherein said compound comprises a chimeric  
2 oligonucleotide.

1 20. The method of claim 1, 5, 7 or 9, wherein at least a portion of said compound  
2 hybridizes with RNA to form an oligonucleotide-RNA duplex.

1 21. The method of claim 9, wherein said compound is at least 70% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 22. The method of claim 9, wherein said compound is at least 80% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 23. The method of claim 9, wherein said compound is at least 90% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 24. The method of claim 9, wherein said compound is at least 95% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 25. The method of claim 9, wherein said compound is at least 99% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 26. The method of claim 1, 5, or 7, wherein said compound is targeted to a nucleic  
2 acid molecule encoding RANK and capable of binding a region of said nucleic acid  
3 molecule encoding RANK.

1 27. The method of claim 21, wherein said compound is at least 70% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 28. The method of claim 21, wherein said compound is at least 80% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

3 29. The method of claim 21, wherein said compound is at least 90% complementary

4 to said region of the nucleic acid molecule encoding RANK.

1 30. The method of claim 21, wherein said compound is at least 95% complementary  
2 to said region of the nucleic acid molecule encoding RANK.

1 31. The method of claim 21, wherein said compound is at least 99% complementary  
2 to said region of the nucleic acid molecule encoding RANK.